REMARKS

I. INTRODUCTION

Claim 18 has been amended. Thus, claim 1-19 remain pending in the present application. No new matter has been added. In view of the above amendments and the following remarks, it is respectfully submitted that all of the pending claims are allowable.

II. THE OBJECTION TO CLAIM 18 SHOULD BE WITHDRAWN

The Examiner has objected to the language of claim 18 because of confusing language. (Office Action 5/17/06 Office Action, p.2 ¶.2). The Examiner's suggested correction has been incorporated, and as such it is respectfully requested that the objection be withdrawn.

III. THE 35 U.S.C. § 102(b) REJECTIONS SHOULD BE WITHDRAWN

Claims 1, 6 and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,236, 315 to Helms et al ("Helms")(*see* 5/17/06 Office Action page 2 ¶.4). Helms discloses a method of increasing the interrogation range of an RF Tag by using two or more reflecting antenna elements (Helms, col. 3, ll. 10-40).

Claim 1 recites "a system, comprising: a transmitter element creating an interrogation signal and transmitting the interrogation signal; and a receiver element receiving a reflection signal of the interrogation signal and combining the reflection signal and *a feedback signal to cancel at least a portion of radio frequency echo signals in the reflection signal.*" Helms neither teaches nor suggests the use of a feedback signal to cancel out frequency echo signals in a reflection signal. There are no feeback loops disclosed in either the description or diagrams of Helms. The figure relied on by the Examiner has a single input from the transmitter portion to the mixer of the receiver portion. However, it is not a feedback loop by any definition of that term and would not be understood to be a feedback loop by one of ordinary skill. In fact,

Helms explicitly states that if a single antenna arrangement is used "an electronic method of canceling the transmitted signal from that received by the receiver chain is required." (Helms, col. 2, ll. 31-35). However, Helms does not teach or suggest what that method is. This is precisely the problem addressed by the claimed invention. Thus, claim 1 is allowable over Helms and it is respectfully requested that the rejection should be withdrawn. Because claims 6 and 7 depend from and therefore include all the limitations of claim 1, these claims are also allowable.

Claims 10-17 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,335,214 to Levy et al ("Levy") (5/17/06 Office Action page 3). Levy discloses an echo canceller for full duplex synchronous data transmission (Levy col.3, ll.6-30; Levy, fig. 3). Levy describes an echo canceller that uses a digital time-domain complex transversal filter which in turn uses the original output signal as part of its input. (Levy col. 11, ll. 20-25).

Claim 10 recites "demodulating *a reflection signal* into an in-phase signal and a quadrature signal; filtering the in-phase signal to isolate an in-phase error signal; filtering the quadrature signal to isolate a quadrature error signal; modulating the in-phase error signal and the quadrature error signal to create a feedback signal; and combining *the reflection signal* and the feedback signal to cancel at least a portion of radio frequency echo signals in *the reflection signal*." The claimed invention uses exclusively the reflected signal (the signal received by the antenna) to perform filtering and echo cancellation. Levy, on the other hand, uses the original output signal to perform the filtering of the error signal and echo cancellation.(Levy col. 11, ll. 20-25). Levy uses the received input signal only for the purpose of "control[ling] the weighting coefficients of ... [the] filter," a process unnecessary in the claimed invention. (Levy col. 11, ll. 54-59). The Levy patent neither teaches nor describes nor suggests the use of a feedback loop in

conjunction with *a reflected signal*. Rather, Levy uses the original output signal together with weighting coefficients, derived from a new, received input signal on the same frequency, to generate the feedback signal. (Levy col. 11, ll. 20-25; Levy diag. 3 elements 23, 31, 37). This is a major difference because the invention in the Levy patent requires the preservation of the original signal in order to perform the echo cancellation, whereas the disclosed invention works exclusively with the received, reflected signal. In light of this distinction, it is respectfully submitted that the rejection of claim 10 should be withdrawn. Because claims 11-13 depend from, and therefore include all the limitations of, claim 10, these claims are also allowable.

Claim 14 recites "a demodulator to demodulate *a reflection signal* into an in-phase signal and a quadrature signal; a first filter to isolate an in-phase error signal from the in-phase signal; a second filter to isolate a quadrature error signal from the quadrature signal; a modulator to modulate the in-phase error signal and the quadrature error signal to create a feeback signal; and a combiner element to combine *the reflection signal* and the feedback signal to cancel at least a portion of radio frequency echo signals in *the reflection signal*." For same reasons discussed with reference to claim 10, this is also allowable . It is respectfully submitted that the rejection of claim 14 should be withdrawn. Because claims 15-17 depend from, and therefore include all the limitations of, claim 14, these claims are also allowable.

IV. THE 35 U.S.C. § 103(a) REJECTIONS SHOULD BE WITHDRAWN

Claims 2-5, 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Helms and Levy. For same reasons discussed with reference to claim 1, Helms does not teach the use of feedback signal to cancel out frequency echo signals in the reflection signal. This deficiency renders the stated obviousness objections moot, and so it is respectfully submitted that the rejections of claims 2-5 should be withdrawn. For same reasons discussed with reference to claim 14, Levy does not teach the exclusive use of a reflection signal to create a filtered feedback signal to cancel out frequency echo signals in the reflection signal. This deficiency renders the stated obviousness objections moot, and so it is respectfully submitted that the rejections of claim 19 should be withdrawn.

Claim 8 stands rejected under 103(a) as unpatentable over Helms and Levy. Applicant respectfully disagrees. As described above, Helms neither discloses nor suggests the use of a feedback signal. Additionally, as described above, Levy requires the use of the original output signal along with the received input signal in order to perform the echo cancellation. It is respectfully submitted that the neither the Helms patent nor the Levy patent, either alone or in combination, disclose or suggest "receiving a *reflection signal*; deriving a *feedback signal from the reflection signal* by isolating an error component of the *reflection signal*; and combining the *reflection signal* and the *feedback signal* to cancel at least a portion of radio frequency echo signals in the *reflection signal*." as recited in claim 8. It is respectfully submitted that claim 8 and all claims depending therefrom are allowable and the rejection under 35 U.S.C. § 103 should be withdrawn.

CONCLUSION

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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